

Appl. No. 10/517,572
Response A dated 6/30/2006
Reply to Office Action of April 13, 2006

REMARKS/ARGUMENTS

I. Concerning the Amendments

The specification is amended to add traditional headings and to include cross-reference information as specified by 37 CFR 1.78. In view of the fact that this cross-reference information can be found on the filing receipt for this application, Applicant believes no petition is needed in connection with this amendment. See MPEP 201.11 (V), last paragraph.

Claims 1, 2, 3, 5, 6 and 27 are amended to insert a concentration range in order to distinguish these claims from the teaching of Ito et al. Support for this range is found in the specification, for example, in Table 1. Claims 17, 19 and 21 are amended to put them in proper format without changing their scope. Claim 4 is amended to specify that the addition of iron ions occurs after step (II), unlike the process of Ito et al. Claims 13 and 14 are canceled in view of the fact that they no longer limit the claims from which they depend.

II. Concerning the Rejection over Prior Art

All pending claims stand rejected as being obvious over Ito et al. (hereinafter Ito) in view of Burgert et al. (hereinafter Burgert).

Ito discloses the preparation of water-absorbent polymers by polymerizing acrylic monomers in the presence of certain metal salts. The amount of metal salt is taught to be at least 0.001% by weight based on the acrylic monomer. The amount 0.001 weight percent can also be expressed as 10 ppm. Burgert teaches a method for preparing water-absorbent polymers by polymerizing acrylic monomers in the presence of bromine- or chlorine-containing oxidizing agents. Burgert discloses that his process requires heating the polymer at from 170°C to 250°C for from 1 to 60 minutes, and that his process advantageously reduces residual monomer levels without significantly reducing the absorption capacity or absorption capacity under load of the polymer. See Burgert at column 4, lines 6-11. Burgert contains no teaching regarding the use of the metal salts of Ito in the monomer mixture.

Examiner's position is that it would have been obvious to prepare the polymer of Ito, then, presuming one was interested in lowering the residual monomer level of

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Ito's polymer, look to Burgert for the suggestion to add oxidizing agent with a heat treatment step.

The sole named inventor for the present patent application is the same person as the first-named inventor on the Burgert reference. The problem faced by the inventor was the problem of how to further reduce residual monomer levels when using the process of the Burgert reference, which itself results in a polymer with reduced residual monomer levels.

The invention involves adding low amounts, e.g. for some claims specifically from about 1 to about 3 ppm, of iron ions during the process of manufacturing a superabsorbent polymer. The Ito reference teaches adding at least 10 ppm of various metal salts to an acrylic monomer mixture. However, Ito does not teach or suggest that adding metal salts will reduce residual monomer content, and especially does not teach or suggest that adding less than 10 ppm of iron ions to the manufacturing process will result in reduced residual monomer content of the polymer. Surprisingly, the inventor discovered that adding low amounts of iron ions to the process of Burgert results in additional reduction of residual monomer levels. Nothing in the prior art teaches or suggests that combining the teachings of Ito and Burgert, by adding iron ions to the process of Burgert, would result in a polymer having further reduced residual monomer levels compared to the polymer of Burgert.

Even if the references could be combined as suggested by Examiner, the process of the present claims would not be the result.

Applicant further notes that Ito suggests at column 4, lines and 62-64, that "the effect produced by the use of the metallic salt according to the present invention is not considered to be due to the formation of redox system."

III. Concerning the Rejection under 35 U.S.C. 112

Claim 1 stands rejected under 35 USC 112, second paragraph, as being indefinite in view of the term "substantial."

In the analysis of a rejection based on indefiniteness, it is recognized by Applicant and the courts that the claims must apprise the skilled artisan of the scope of the claim so he can, with little or no experimentation, determine whether his

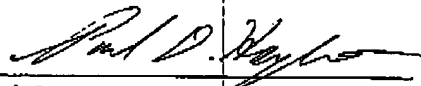
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activity infringes the claim. In re Fisher, 166 USPQ 18 (1970); In re Conley et al., 180 USPQ 454 (1974). Applicant believes that the aforementioned terms have well-recognized meanings to those skilled in the art. The word "substantial" in Claim 1 is used in the phrase "prior to substantial drying of the hydrogel ...". Those skilled in the art of the manufacture of superabsorbent polymers would have no trouble understanding this phrase. For evidence of this, see the teaching of Burgert at col. 10, l. 65 to col. 11, l. 44, and note the use of the word "substantially" at col. 11, lines 29-30. Thus, the claims containing the term "substantial" will in fact apprise the skilled artisan of what acts will infringe the claims and what acts will not. Nothing further is required in order to satisfy the second paragraph of 35 USC 112.

IV. Conclusion

For the foregoing reasons, reconsideration of the claims and passing of the application to allowance are solicited.

Respectfully submitted,



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